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ABSTRACT

This paper deals with the critical needs of organizations to cope with external stress and change. The concept of "competence" is analyzed into the components adaptability, reality-testing, identity, and integration; and each component is discussed. Data are presented from a HumRRO project, which had as its objective that of determining the contribution of each of the competence components and of competence as a whole to organizational effectiveness. (Author)

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Factors in Organizational Effectiveness

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16. Abstracts

This paper, in the field of organizational theory, deals with critical needs of organizations to cope with external stress and changes. The concept of "Competence" is analyzed into components--adaptability, reality-testing, identity, and integration. Each of these components is discussed. Data are presented from a HumRRO project which had the objective of determining the contribution of each of the components of Competence, and of Competence as a whole, to Organizational Effectiveness.

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FACTORS IN ORGANIZATIONAL EFFECTIVENESS

Joseph A. Olmstead

Most attempts to improve organizational performance tend to be actions toward the replacement of key individuals; modifications in structure; or the development of new technology in the form of equipment, computers, and systems. At one time or another, each of these remedies may be required; however, all too frequently, they seem to be applied because they are the most obvious when, in fact, the real problems may lie elsewhere.

These circumstances suggest that present ways of thinking about organizations may be seriously inadequate. Bennis (1966, pp. 34-63), probably the most articulate critic of organizational theory, contends that the traditional approaches are "out of joint" with an emerging view of organizations as adaptive, problem-solving systems, and that conventional studies of effectiveness are not sensitive to the critical needs of organizations to cope with external stress and change. According to Bennis, the usual methods of evaluating effectiveness provide static indicators of certain output characteristics, such as performance or satisfaction, without showing the processes by which the organization searches for, adapts to, and solves its changing problems. Yet, without understanding of these dynamic processes, knowledge about organizational behavior is woefully inadequate.

A few other writers have recognized the importance of the adaptive processes used by an organization. For one, Altman (1966) contends that performance effectiveness should be viewed from a much larger perspective—to include so-called "process variables" as intrinsic antecedents of performance outputs. He says, "We reject the approach to . . . organizational performance solely from a 'black box' point of view, but propose, instead, a strategy of research that peers into the box and attempts to understand the sequential development of performance as it progresses from input to output" (1966, p. 84).

This swing to a process emphasis by such respected theorists as Bennis and Altman, along with Parsons (1960), Selznick (1957), and others, signals a significant new development in ways of thinking about organizations. It has finally become apparent that, with organizations, as with people, it is necessary to focus attention upon dynamics. Because an organization is an adaptive equilibrium-seeking organism, the processes through which adaptation occurs are a significant subject for analysis. It is, therefore, important to learn precisely how these processes contribute to overall effectiveness. It is equally important to understand what factors influence functioning of the processes and what determines, within a particular organization, whether the processes can resist disruption under pressure arising from the environment.

One major barrier to accomplishing these objectives has been a lack of concepts that are both amenable to systematic research and useful for organizational diagnosis and development. At HumRRO, efforts to overcome this barrier have centered around several concepts that are subsumed under the rubric of "Organizational Competence."

The conceptual framework derives from the view that one of the most critical factors in the effectiveness of any organization is its ability to sense changes in its external and internal environments, to process the information sensed, and to adapt operations to the sensed changes. The ability of the organization to perform these functions is what is meant by "Organizational Competence"—the capacity of an organization to cope with continuously changing environments.

It is further conceived that "Competence" is a major determinant of Organizational Effectiveness. Where "Effectiveness" is the final outcome (mission accomplishment, productivity, etc.), Competence is the ability of the organization to perform the critical operational functions, or processes, that lead to achievement of effectiveness. When the processes that comprise Competence are handled well, they enable an organization to be effective. When handled poorly, they may negate many of the positive effects contributed by efficiency in other areas.

For both research and practical purposes, it was necessary to analyze the concept of Competence into identifiable components and, then, to operationalize these components. Four components were finally evolved:

(1) Adaptability. Coincides with problem-solving ability which, in turn, depends upon flexibility of the organization. Flexibility is the capacity to learn through experience, to change with changing internal and external circumstances.

(2) Reality-Testing. The organization must develop adequate techniques for determining the realities of its situations, for determining the real properties of its environments. Accurate sensing of the environments is essential before adaptability can occur.

(3) Identity. Adaptability requires that an organization "know who it is and what it is to do." Identity involves:
   (a) The extent to which the organizational goals are understood and accepted by personnel.
   (b) The extent to which the organization is perceived accurately by its personnel.
   (c) The extent to which there is involvement with the organization and with its goals.

(4) Integration. The extent to which structure and function are maintained under stress, and the relationships among sub-units are such that coordination is maintained and various units do not work at cross purposes.

Three of the components—Adaptability, Reality-Testing, and Identity—are Bennis' (1966) criteria of organizational health. The fourth component—Integration—was added in order to cover what was considered to be an especially critical aspect of organizational performance.

The next problem was to "operationalize" the components. Building upon Bennis' notion of adaptability, Schein (1965) says every organization must execute an "Adaptive-Coding Cycle" in order to adapt to changes in its environments. This cycle consists of six steps. For the analysis of Competence, another step was added, resulting in seven organizational processes considered to be critical ingredients:

(1) Sensing—Information acquisition.
(2) Communicating Information Sensed—Information processing.
(3) Decision Making—Solving problems and making decisions.
(4) Stabilizing—Making required internal changes while reducing or managing undesired by-products.
(5) Communicating Implementation—Processing information concerning actions to be taken.
(6) Coping Actions—Execution of actions required by environmental changes.
(7) Feedback—Obtaining information on the results of the actions taken.

It can be seen that the processes can be subsumed under three of the four components of Competence. Thus, Reality-Testing consists of Sensing, Communicating Information Sensed, and Feedback. Adaptability consists of Decision Making, Communicating Implementation, and Coping Actions. Integration consists of Stabilizing. The remaining component, Identity, is not a process component but a social-psychological state, and it is measured not in terms of performance, but by a questionnaire.

To illustrate relevance of the concepts, data are presented from a HumRRO project which had the objective of determining the contribution of each of the components of Competence, and of Competence as a whole, to Organizational Effectiveness. A second objective, still being studied, is to identify human factors that influence the quality of Competence performance. Stated simply, the problem was to assess Organizational Effectiveness, assess performance on the processes comprising Competence, and determine the relationship between these measures.

The data presented are based upon the performance of 10 groups of 12 experienced officers who participated as battalion commander, battalion staff, and company commanders in an 8-hour role simulation of a light infantry battalion engaged in internal defense operations. Time limitations do not permit the description of the elaborate simulation and scoring procedures. The data consisted of all communications occurring within the organization during the 8-hour problem. These averaged 1,250 communications per group. Each communication was classified according to the process that was performed and also was scored in terms of quality of performance of the process. Effectiveness was measured by evaluations of experienced field-grade officers who used preestablished criteria concerned with extent of mission accomplishment.

Zero-order correlations between group scores on each of the seven processes and Effectiveness are shown in Table 1. Significant relationships with Effectiveness were found for five of the seven processes. Small, but not significant, relationships were found for Stabilizing and Feedback.

Table 1

Relationship of Organizational Processes to Effectiveness

Organizational Process	Correlation With Effectiveness[a]
Sensing	.92
Communicating Information Sensed	.79
Decision Making	.78
Stabilizing	.22
Communicating Implementation	.75
Coping Actions	.70
Feedback	.18

[a].63 required for significance at .05 level of confidence.

Process scores were combined to obtain scores for three of the components of Competence—Reality-Testing, Adaptability, and Integration. These scores were combined with the Identity score to obtain a score for Competence. Table 2 shows zero-order correlations for Competence and each of its components.

Both Reality-Testing and Adaptability were significantly correlated with Effectiveness, and Identity approaches significance at the .05 level. Competence, considered as a whole, is significantly related to Effectiveness.

These data illustrate the critical relevance of Competence for Organizational Effectiveness. In the study described, Competence accounted for 46%, almost one-half, of the variance within Effectiveness. Therefore, Competence appears to be a major determinant of Effectiveness.

Although each group performed continuously throughout the 8-hour problem, the simulation was administratively divided into an initial 1-hour "shakedown" period and

Table 2

Relationship of Competence and Components to Effectiveness

Component	Correlation With Effectiveness[a]
Reality-Testing	.96
Adaptability	.79
Integration	.22
Identity	.58
Competence	.68

[a].63 required for significance at .05 level of confidence.

three phases of 2 hours and 20 minutes each. Within the phases, environmental pressure was manipulated by changes in frequency of input messages and complexity of the problems to which inputs were related. Inputs were centered around a total of 128 interlocking, but separately identifiable, "probes" or problems. Thus, phases differed in the amount of pressure that was generated. Phase 1 was the "Low" pressure phase, the second phase was characterized as having "Moderate" pressure, and Phase 3 was "High" in pressure.

Figure 1 shows mean probe process scores averaged by phase for the five groups that were scored as "most effective" in terms of mission accomplishment, and the five groups scored as "least effective."

Figure 1 illustrates a number of significant points. First, an analysis of variance showed significant differences between the five "most effective" groups and the five "least effective" ones and between Phases. Furthermore, process performance by the Most Effective groups was better in all phases.

Mean Probe Process Score by Phase

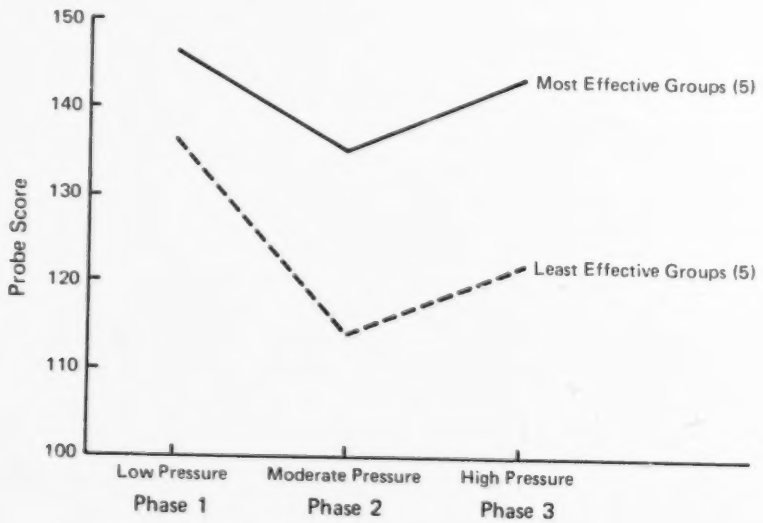

Figure 1

Figure 1 also shows a strong degradation in process performance by both the most effective and the least effective groups during Phase 2. This decrease occurred because each group experienced a radical change in its mission and its operational conditions at the beginning of Phase 2. The degradation in process performance illustrates a phenomenon that occurs in most organizations when they are faced with sudden change or extreme stress. For a period, performance and internal coordination may deteriorate, resulting in reduced effectiveness.

However, change or stress affects some organizations more than others. This is confirmed in Figure 1, which shows that the relative degradation in process performance during Phase 2 was much greater for the Least Effective groups.

Finally, in Phase 3, the Most Effective groups succeeded in a complete and rapid recovery back to the level of their initial process performance, despite the fact that this phase was, in effect, a "pressure-overload" situation. On the other hand, under pressure overload, the Least Effective groups recovered only slightly, and never reached their initial level of performance. The ability of the more effective groups to recover rapidly after a radical change probably accounts for much of their ultimate effectiveness. This finding illustrates the fact that some organizations "fold up" under change and pressure, whereas others do not. More important for consideration here is the fact that the deterioration occurs in their performance of critical processes. In this connection, a question currently under study at HumRRO is, "Why do the processes in some organizations break down under change and pressure while they do not do so nearly as much in other organizations?"

It is believed that these results demonstrate the critical importance of process performance as a determinant of organizational effectiveness. Competence is concerned with the quality of performance within an organization and, accordingly, is an important factor in effectiveness. Yet, this aspect of performance has received little systematic attention in either research or organizational development and training.

The capacity of an organization to identify, solve, and adapt to operational problems derives in part from the formal body of policies and procedures intended to guide decisions and actions, in part from the adequacy of techniques and equipment, and, in part, from the skills of individual personnel in performing the necessary activities. However, neither the logic of decisions, nor the adequacy of techniques and equipment, nor the competence of individuals in executing technical operations are sufficient to result in a controlled and directed system of organizational decision and action. A remaining critical element involves organizational processes concerned with the coordination of activities and the integration of information and decisions. Included in these processes are the ways objectives are derived and communicated, the means whereby information is acquired and processed within the organization, and the ways activities of key personnel are coordinated. Also included are processes involved in reaching and implementing decisions and in obtaining feedback on the results of actions taken.

This emphasis upon organizational responses to problem situations points up the role of the organization as a problem solver and decision maker. Although individuals actually perform the problem-solving and decision-making activities, the necessity for global organizational responses makes it useful to think of the organization as a problem-solving, decision-making system in which the basic purpose is to take directed, unified action in an environment that presents a continuous flow of uncertainty situations. In such a system, the means whereby information, decisions, and actions are brought into conjunction involve a complex interplay between positions and between levels. This constant interplay is the essence of modern organizational competence.

It is apparent that Competence is mainly dependent upon the performance of personnel. Some technological assists can be provided, such as data-processing systems and even highly sophisticated communications systems; however, the payoff in Competence ultimately reduces to the judgments and actions of key personnel, both individually

and collectively. It depends upon the quality and quantity of information that is acquired; choices concerning to whom acquired information is to be communicated, as well as the accuracy and completeness of the communications; decisions concerning ways to cope with unusual or unanticipated situations, and the actual execution of actions resulting from such decisions—all performed at a high level of sensitivity and coordination. These are uniquely human activities that can only be assisted by technology.

In many organizations, the quality of process performance is not very good because, in order to control variability and thus ensure reliability, many leaders tend toward regulated and formal responses. They tend to prefer the certainty of standardized procedures with their clearly demarcated and logically related stages and, accordingly, they give little systematic attention to process performance. However, over-reliance upon standardized responses tends to result in organizational rigidity, whereas, in the fast-changing environments of today, to be effective an organization must maintain a high level of flexibility. This quality is essential in uncertainty situations, and it has its source in what has been called here "Organizational Competence."

Leaders cannot be criticized too severely for over-emphasis on standardized responses. Although most people who have given much thought to organizations are aware of certain more or less intangible aspects, which, here, have been called processes, these factors are often viewed as impossible to see and difficult to understand. Accordingly, little is ever done about them in any systematic way.

The conceptual framework presented here under the rubric of Organizational Competence seems to offer a means for overcoming this problem. For research purposes, the Competence components and their processes, together with the methodology for their measurement, provide concrete ways for analyzing internal functioning and for relating such functioning to both antecedent causal factors and ultimate achievement.

In application, Competence and its components offer potential for both organizational diagnosis and development. Thus, it is possible to identify individuals, positions, or departments that are functional or dysfunctional in terms of performance of some or all processes. It is possible to determine who, or what departments, should perform each process, how well the processes are performed, and how they could be performed better.

The processes that have been identified provide both a framework for evaluation and bases for training and organizational development. Knowledge of requirements for effective process performance, when coupled with controlled experiences in execution, can be expected to result in decided improvements in the leadership and managerial performance of individuals. However, the greatest benefit is to be found in performance of the organization, considered as a whole. Fundamental to the framework is the view that Competence represents capability of the organization and is different from the sum of individual capabilities. Process performance involves organizational responses and the quality of any single response event is determined by the entire network of antecedent relationships and responses. This suggests that Organizational Competence can best be improved by efforts that focus upon developing the organization as a system, that is team training of all key personnel together, rather than skill development with isolated individuals.

The processes that occur within organizations have been neglected when, in fact, they appear to be critical determinants of effectiveness. The conceptual framework embodied in Organizational Competence appears to provide one productive means for overcoming this limitation in both research and application.

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